REMARKS

Claims 1-58 are all of the claims pending in the application; claims 1-7 and 12-58 have been withdrawn from consideration; claims 8-11 are rejected.

Claims 12-58 are being canceled without prejudice or disclaimer.

New claims 59-61 are being added

After entry of the amendment, claims 1-11 and 59-61 will be pending.

Claims 8-10 have been amended to clarify that which Applicants regard as their invention by replacing the term "variant" with "mutant."

No new matter has been added. Entry of the Amendment is respectfully requested.

I. Rejection of Claims Under 35 U.S.C. §112, first paragraph

A. At paragraph 3 of the Office Action, claims 8-11 are rejected under 35 U.S.C. §112, first paragraph, as lacking adequate written description support in the specification as filed.

The Examiner explains that the specification only provides a single representative species of all of the possible variant microorganisms encompassed by the claims, i.e., those microorganisms which convert a cyano group into a carboxyl group, and that are defective or reduced in converting a cyano group into an amide group.

The Examiner further states that there is no disclosure of any particular structure to function/activity relationship in the single disclosed species, and that the specification fails to describe any other representative species.

The Examiner concludes that Applicants have failed to sufficiently describe the claimed invention, in such full, clear, concise, and exact terms that a skilled artisan would recognize Applicants were in possession of the claimed invention.

In response, Applicants assert that the skilled artisan would readily recognize that Applicants were in possession of the claimed invention. First, at page 19 (lines 14-18) of the specification, a list of microorganisms known to have an activity of hydrolyzing nitrile is provided. Furthermore, the specification teaches that strains from this group are mutagenized to obtain a microorganism that is encompassed within the scope of claim 8 (page 20, line 11, to page 21, line 19; Example 1 (pages 35-38). Finally, as stated in the specification and recited in the claims, each member of this genus of microorganisms has specific metabolic characteristics. Thus, the genus of microorganisms encompassed by the claims is clearly described in the specification, and therefore there is adequate written descriptions support in the specification as filed.

In view of these arguments, Applicants respectfully request reconsideration and withdrawal of this rejection.

B. At paragraph 4 of the Office Action, claim 11 is rejected under 35 U.S.C. §112, first paragraph, as being non-enabled.

The Examiner states that while it is indicated in the specification that the claimed microorganism has been deposited (FERM BP-7305), no indication has been made as to the public availability of the deposit.

In response, Applicants enclose herewith a Statement of Availability signed by Applicants, stating that the microorganism has been deposited under the terms of the Budapest

Treaty, and that the strain will be irrevocably, and without restriction or condition, released to the public upon the issuance of the patent.

In view of the submission of this statement, Applicants respectfully request reconsideration and withdrawal of this rejection.

II. Rejection of Claims Under 35 U.S.C. §112, second paragraph

At paragraph 5 of the Office Action, claims 8-10 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

The Examiner states that claims 8-10 are vague and indefinite because the meaning of the phrase "variant microorganism" is not known, and it is not known when a microorganism is or is not a "variant microorganism."

In response, Applicants include herewith an amendment to the cited claims, replacing the term "variant" with the term "mutant." Thus, the claims now clearly encompass those microorganisms having a mutation either through the actions of a mutagen or through a spontaneous mutation.

In view of the amendment to the claims, Applicants assert that the cited claims are definite, and therefore respectfully request reconsideration and withdrawal of this rejection.

III. Rejection of Claims Under 35 U.S.C. §102(a)

At paragraph 8 of the Office Action, claims 8 and 9 are rejected under 35 U.S.C. §102(a) as being anticipated by Kato et al. (*J. Mol. Catal. B:Enzy.* 6:249-256 (1999)).

The Examiner states that Kato et al. teaches a *Rhodococcus* sp. strain YH3-3 that contains an inactivated nitrile hydratase which converts a cyano group into an amide group and, in absence of facts to the contrary, inherently has an active nitrilase which converts a cyano group

into a carboxyl group. Thus, the Examiner concludes, the teachings of the reference anticipate the claimed invention.

In response, Applicants respectfully assert that in contrast to the Examiner's position, it is clear that the *Rhodococcus* sp. strain YH3-3 of Kato et al. contains an active nitrile hydratase.

Applicants first note that in Figure 2 of Kato et al., while 3-cyanopyridine is not degraded in acetone-dried (▲) cells and heat-treated (●) cells of *Rhodococcus* sp. strain YH3-3, it is decreased (degraded) after 90 minutes in the intact (○) *Rhodococcus* sp. strain YH3-3 cells. This demonstrates that while in the acetone-dried (▲) cells and heat-treated (●) cells of *Rhodococcus* sp. strain YH3-3, the nitrilase enzyme is inactivated, the enzyme is fully functional in untreated (intact) cells.

Furthermore, the abstract (lines 6-7) of Kato et al. describes that "[h]eat-treatment of the cells increased the accumulation of 3-cyanopyridine from *E*-pyridine-3-aldoxime because the nitrile degrading enzyme, nitrile hydratase was inactivated."

There are also statements that "[t]o inhibit the nitrile degrading enzymes, heat-treated cells or acetone-dried cells of the strain were prepared" (page 253, right column, lines 18-21); and "[i]n the heat-treated cells, nitrile hydratase activity was decreased to 55%" (page 253, right column, lines 40-41). Therefore, it is clear that the activity of the nitrile hydratase of the intact cells of *Rhodococcus* sp. strain YH3-3 is not defective or reduced. It is only upon heat-treatment or acetone-treatment that the activity of the enzyme is reduced.

Accordingly, the *Rhodococcus* sp. strain YH3-3 disclosed in Kato et al., is not a mutant microorganism that (1) has nitrilase activity which converting a cyano group into a carboxyl

group and (2) is defective or reduced in nitrile hydratase activity which converts a cyano group into an amide group, as recited in claim 8.

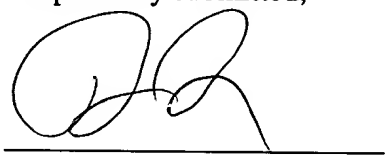
In view of these points, Applicants assert that Kato et al. does not teach each element of the claimed invention, and therefore respectfully request reconsideration and withdrawal of this rejection.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Drew Hissong
Registration No. 44,765

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373
PATENT TRADEMARK OFFICE

Date: March 28, 2003

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

8. (Amended) A mutant ~~variant~~ microorganism having the activity of converting a cyano group into a carboxyl group and being defective or reduced in the activity of converting a cyano group into an amide group.

9. (Amended) The mutant ~~variant~~ microorganism as claimed in claim 8, wherein said microorganism is a mutant ~~which is a variant~~ strain of a microorganism belonging to the genus *Rhodococcus*.

10 (Amended) The mutant ~~variant~~ microorganism as claimed in claim 9, which is a mutant ~~variant~~ strain of *Rhodococcus* sp. ATCC39484.

Claims 59-61 are added as new claims.